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The MAPP Program and its Fiscal Year 2018 Funding Opportunities

During this webinar, MAPP program managers will present details about the MAPP program and its FY 2018 funding opportunities, and hold a Q&A session on program, competitions, and application process.

We will provide an overview of the program, including our function within the Climate Program Office and NOAA, our program's research focus areas, and ways that we partner with other programs in and outside of NOAA. We will describe our three FY 2018 competitions, which have been published at cpo.noaa.gov and released on Grants.gov, and discuss the application process. We will close the webinar with a Q&A session, in which we will answer your questions of general interest in real time via the chat function in WebEx.

The webinar will start at 1 p.m. ET.

Thanks for joining!

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The Modeling, Analysis, Predictions, and Projections (MAPP) Program and Our FY 2018 Opportunities

MAPP Team:

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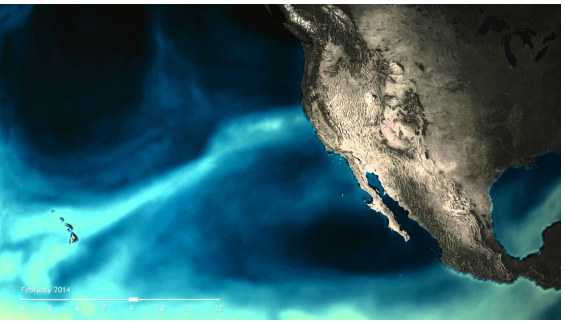
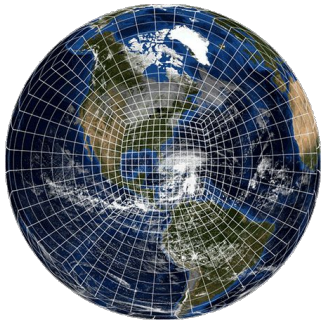
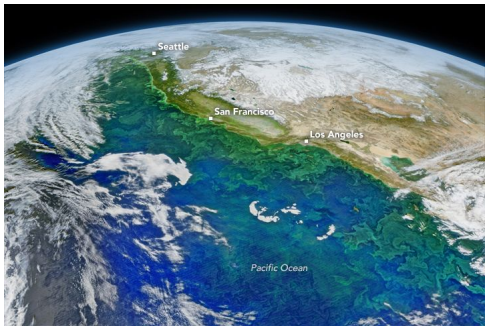


Still from an animation of at atmospheric river in February 2014. (Credit:: NOAA)



The GFDL Finite Volume Cubed-Sphere Dynamical Core (FV3). (Credit: NOAA)

San Luis Reservoir during CA drought on Feb. 5, 2014. (Credit:: CA Department of Water Resources/Florence Low.)



Satellite image of phytoplankton in the California Current on February 8, 2016. (Credit: NASA)

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Presentation overview

A three-part presentation:

1) Overview of the MAPP program (Dan)
2) Description of the three FY 2018 competitions (Dan and Heather)
3) Application process and guidance (Heather)

Q&A

- Please ask general-interest questions, not ones that are proposal-specific
- Submit your questions via the chat function
- We will answer questions without revealing the identification of the questioners

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The MAPP Program: An Overview

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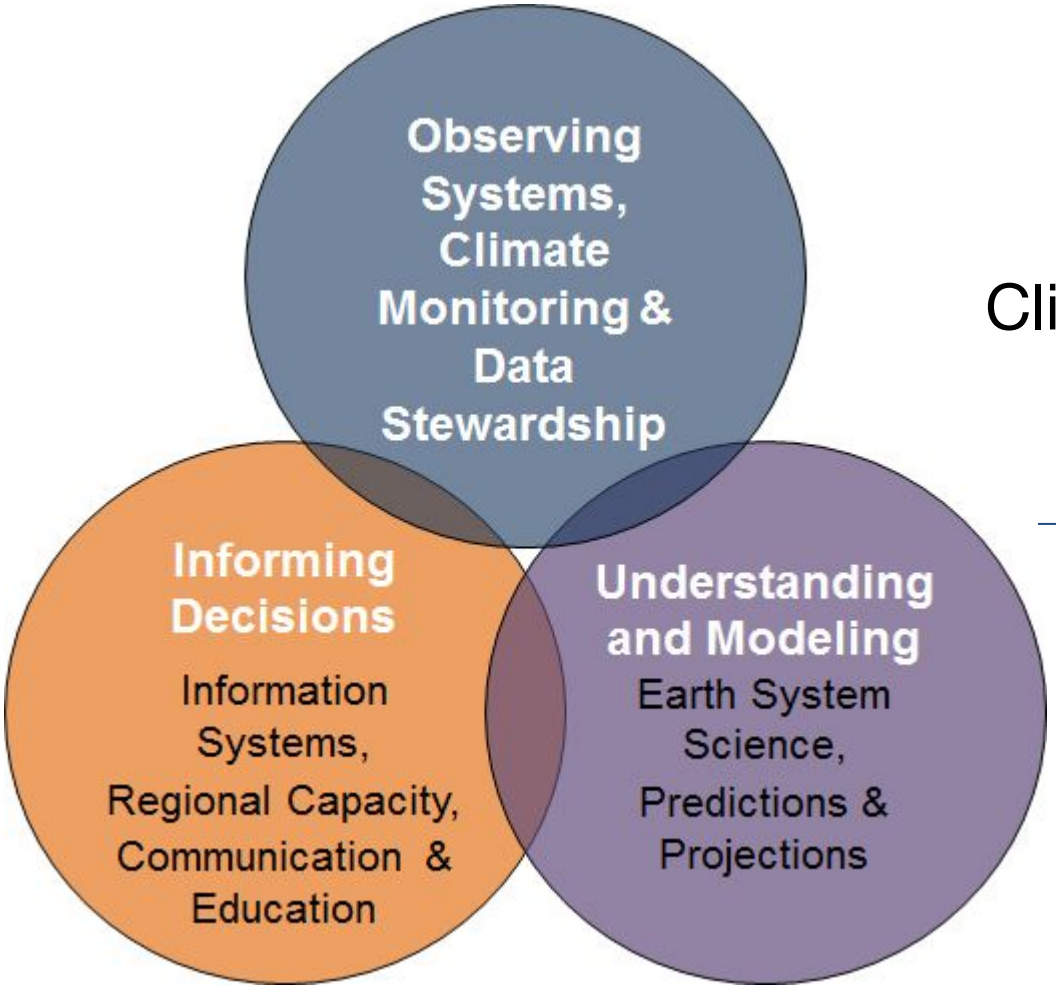
Our role in NOAA

CPO Research Areas



Office of Oceanic & Atmospheric Research

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Climate Program Office (CPO)

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→ **MAPP Program**

A competitive grants program with the mission to enhance the Nation's capability to understand and predict natural variability and changes in Earth's climate system

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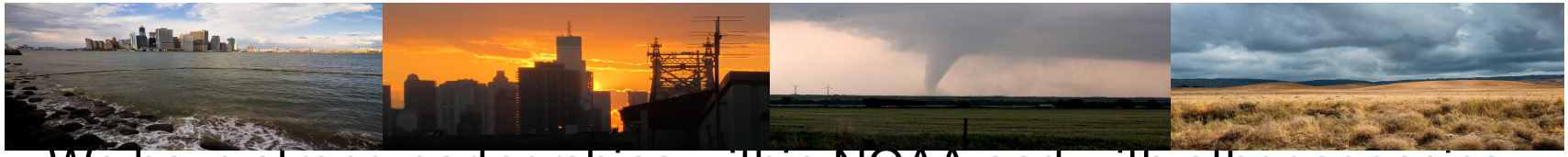
Our program's scope

- We support research, transition to applications, and engagement activities that focus on the development, integration, and application of Earth system models and analyses



- We have strong partnerships within NOAA and with other agencies through US Global Change Research Program, US Climate Variability and Predictability Program, and National Earth System Prediction Capability Program

- We engage with the external research community to extend NOAA's research capabilities; we facilitate internal research interactions and coordination

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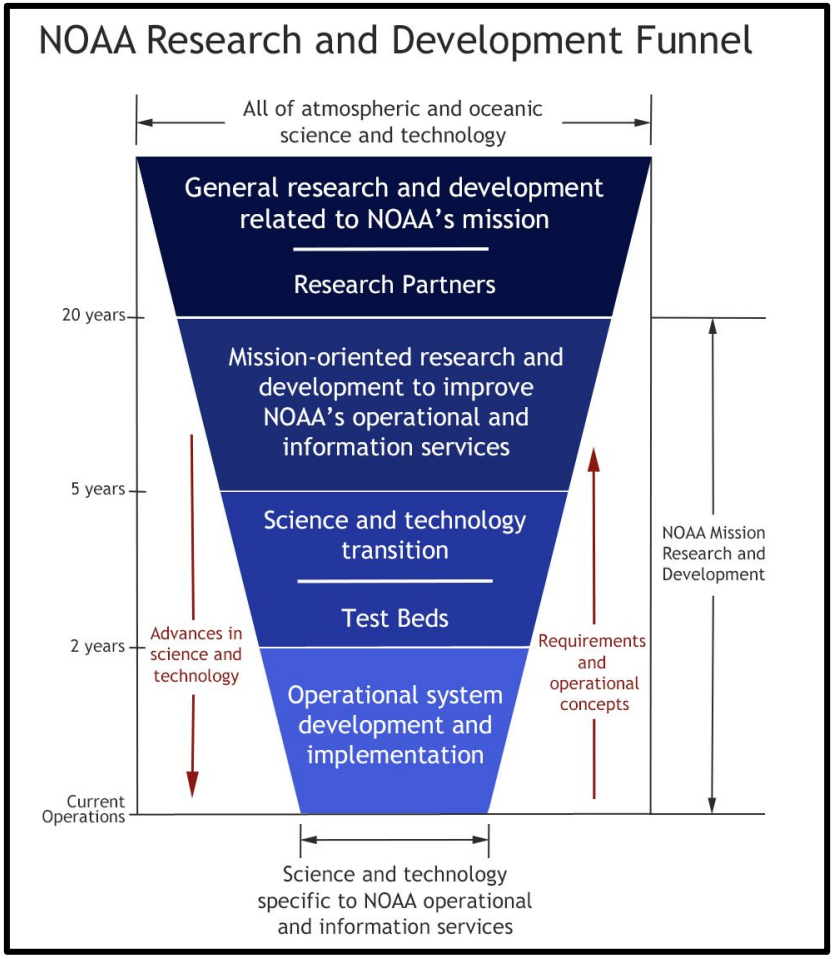
MAPP supports mission-driven research

- All research proposals to MAPP come through CPO's annual Federal Funding Opportunities
- Our grant competitions fund both research and transition work to help support NOAA's service requirements
- We follow the R&D funnel business model



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Our research focus areas

Prediction - Weeks to Decades

Climate Reanalysis

Climate and Earth System Modeling

Drought and Other Applications

Climate Projections

See what MAPP funds by visiting http://cpo.noaa.gov/mapp and clicking on "Funding Opportunities & Funded Projects"

- MAPP supports these research areas via annual grant competitions open to all eligible institutions

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Our Task Forces

Prediction - Weeks to Decades	Subseasonal to Seasonal Prediction
Climate Reanalysis	Climate Reanalysis (ended 2015)
Climate and Earth System Modeling	Climate Model Development (ended 2016)
Drought and Other Applications	Drought (currently second iteration)
Climate Projections	Model Diagnostics

- A Task Force is a coordinated research effort by MAPP investigators focused on the topic of a particular grant competition

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Transition of research to operations: The Climate Test Bed

The **NOAA Climate Test Bed** is a joint effort of CPO/MAPP and the National Centers for Environmental Prediction to advance operational climate monitoring, models, and prediction capabilities by accelerating transition of research into operations

The Climate Test Bed fosters the service–science link between NOAA and the broader scientific community.

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Example project: Subseasonal Experiment (SubX)

- Goal: Address gaps in NOAA and ESPC operational prediction capabilities at sub-seasonal to seasonal (S2S) timescales
- Activity: Coordinated subseasonal hindcasting and real time forecasting experiment targeting subseasonal timescales
- Models involved: CFS, Navy, NASA/GEOS5, NCAR/CCSM, CanCM
- Project plan: first year - run hindcasts, second year - real time forecasts

Environment Canada

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Our program by the numbers

- 120+ principal investigators engaged annually and 80+ ongoing projects
- 300+ sponsored publications each year
- Special issues/collections in journals
- Several transitions of research into operations or applications each year
- Communication and outreach, including a webinar series in its 6th year, and a quarterly newsletter
- Numerous community reports from MAPP-organized workshops and other activities that inform NOAA

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Research focus highlight: Subseasonal to seasonal prediction

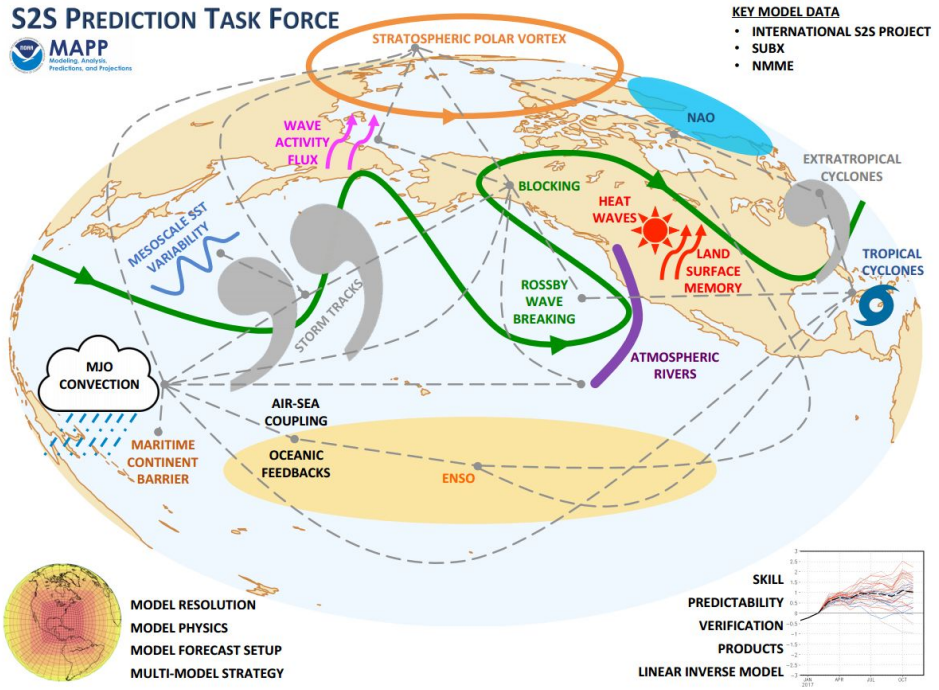
NOAA has initiative to develop subseasonal to seasonal (S2S) predictions

→ MAPP S2S Prediction Task Force: 2016-2018 term; based on MAPP S2S-focused projects funded for FY 2016-2018

Leadership: Elizabeth Barnes (lead), Paul Dirmeyer, Andrea Lang, Edmund Chang

Goals:

- Advance capability to model and predict sources of S2S predictability to help close prediction gap between weather and seasonal lead times
- Focus MAPP-funded S2S research and transition activities (e.g., SubX)
- Facilitate connections with other S2S research efforts (e.g., WWRP/ WCRP S2S Prediction Project)



http://cpo.noaa.gov/MAPP/s2stf

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The MAPP Program's FY 2018 Grant Competitions

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The FY 2018 MAPP Announcement

- MAPP's FY 2018 Announcement was published on May 15th, 2017 as part of CPO's Federal Funding Opportunity (FFO) (see grants.gov and cpo.noaa.gov)

- Deadlines*:
  - Letters of Intent: Jun 28
  - Applications: 5pm ET, Sep 11

- This year, the announcement includes 3 separate MAPP competitions

- Proposals may only target one competition

*See next section for how to apply. These deadlines apply to MAPP only; other CPO programs have different deadlines.

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Competition 1: Advancing Earth System Data Assimilation (DA)

Research projects focused on:

- Developing a new methodology, or significantly advancing an existing methodology, for **coupled DA**

  Requirements:
  - relevant to prediction or monitoring needs of a NOAA Line Office
  - metrics and benchmarks for comparison against existing techniques
  - investigators from multiple institutions
  - Funding levels: up to $500K/yr for up to 3 yrs

- Developing a new or experimental **DA-based approach** to monitoring products for the cryosphere, ocean, land surface, or atmospheric composition

  Requirements:
  - involvement of a NOAA investigator/collaborator
  - relevance of new products to a NOAA Line Office
  - new product evaluation and validation
  - Funding levels: up to $170K/yr for up to 3 yrs

Competition Contact Information:

MAPP Program Competition Manager: Heather Archambault (heather.archambault@noaa.gov)
NGGPS Program Manager: Frederick Toepfer (frederick.toepfer@noaa.gov)
JPSS STAR Program Manager: Lihang Zhou (lihang.zhou@noaa.gov)

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Competition 2: Addressing Key Issues in CMIP6-era Earth System Models

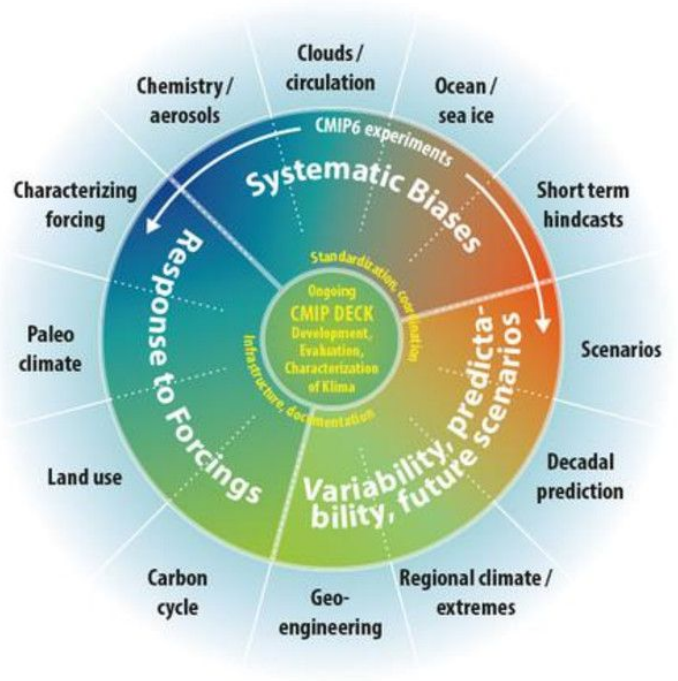
Research projects focused on:

- Understanding the sources of model bias in CMIP6-class models, and developing process-oriented metrics to inform model development

  Requirements:
  - Define pathways for model improvement
  - Develop process-oriented metrics and contribute to a metrics framework
  - Focus on cryosphere, extremes, or sea level and coastal dynamics with possible cross-cutting focus on clouds or the Arctic.
  - Funding levels: up to $170K/yr for up to 3 yrs

- A team approach to advancing a metrics framework, leadership of a Task Force, and integration of individual metrics into the framework.

  Requirements:
  - Funding levels: up to $500K/yr for up to 3 yrs



WCRP CMIP6
World Climate Research Programme

Competition Contact Information:

MAPP Program Competition Manager: Dan Barrie (daniel.barrie@noaa.gov)

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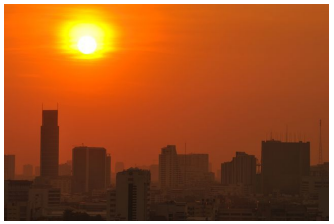
Competition 3: NOAA Climate Test Bed - Advancing NOAA's Operational S2S Prediction Capability

Transition projects involving external community to advance Climate Prediction Center's subseasonal-to-seasonal prediction capabilities by:

1) Testing and demonstrating an experimental prediction methodology or system developed in the broader community **for operational purposes**
2) Improving **multi-model ensemble prediction systems** by testing and demonstrating
   - utility of new or higher-resolution models
   - improved forecast initialization practices
   - upgrades to other aspects of the system



Requirements:

- "Readiness level" of 5-8 at start of project (i.e., project is in late-stage development or demonstration; see information sheet appendix for details)
- A co-PI or collaborator from NCEP
- Support letter from NCEP
- Section describing metrics to be used
- Signed transition plan submitted with proposal

Funding levels: up to $170K/yr for up to 2 yrs

Competition Contact Information:

MAPP Program Competition Manager: Heather Archambault (heather.archambault@noaa.gov)
NGGPS Program Manager: Frederick Toepfer (frederick.toepfer@noaa.gov)
CTB Acting Director: David DeWitt (david.dewitt@noaa.gov)

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CPO Review Process and Funding Recommendations

- Proposals undergo a rigorous two-stage review process described in the FFO based on 4 criteria:
  - Stage-1 Peer review panel (75% of score) evaluates:
    (1) scientific/technical merit,
    (2) qualifications of team, and
    (3) appropriateness of budget
  - Stage-2 review panel (25% of score) evaluates relevance to program and NOAA
- The funding priority (ranking) for applications is set by the total score from this two-stage panel process
- Conditional on funding availability; generally about one-fourth of full applications are successful
- Final decisions on proposals are typically not made until late Winter or Spring, depending on Government budget processes

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Being a MAPP PI

- Our program operates a webinar series in which investigators present their work to the broad community
- Our task forces provide a platform for communication and collaboration between our PIs
- We promote the work of our PIs through Climate.gov and other outlets
- MAPP PIs and managers organize and lead sessions at relevant community meetings
- Our program circulates a program newsletter describing recent research findings and accomplishments and other opportunities
- PIs are required to submit annual and final reports

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3) Applying to MAPP Competitions

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Where to Start?

- MAPP's competitions are included in CPO's Federal Funding Opportunity (FFO) published on grants.gov and cpo.noaa.gov
- The FFO includes information on:
  - Program objectives and priorities
  - Expected number, size, and duration of awards per CPO program
  - Who is eligible to apply
  - Elements of letters of intent (LOIs)
  - Elements of full applications
  - Deadlines for LOIs and full applications
  - Application review and selection criteria
  - Award reporting requirements
- **Information sheets** accompanying the FFO provide detailed descriptions of each competition - read carefully

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Letter of Intent Process

- Purpose of process: provide feedback on the relevance of your proposed project to the competition
- You are strongly encouraged to submit an LOI, though it is not required
- Elements of an LOI -- no more than 2 pages in length:
  - Identification of the competition being targeted in the LOI
  - A tentative project title
  - Name(s) and institution(s) of the PIs
  - Statement of the problem
  - Summary of work to be completed, including methodology to be used and data sets needed or to be collected
  - Approximate cost of the project
  - Relevance to the competition being targeted

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Letter of Intent Process (2)

- We evaluate all LOIs and will determine whether a full application is:
  - **Encouraged**: The LOI addressed required elements of the call
    Marginally encouraged: It hits some, but not all, required elements
  - **Discouraged**: It does not address required elements
- This year, you'll receive our response to your LOI by **Jul 26**
- Note that the LOI evaluation does not involve an assessment of scientific merit
- Our response notes whether an LOI is deemed relevant or not but not the specifics as to why
- Please refrain from emailing us about whether an idea is relevant, as the LOI process serves that function

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Elements of an Application

Applications are reviewed according to the 4 published review criteria.

As described in the FFO, application elements include

- Title page, including institutions, PIs, authorized representatives, and total funding and breakdown by institution and year
- One-page abstract
- Results from last 3 years of research (2 pages max)
- Statement of work (page limit depends on number of PIs)
- Data/information sharing plan (max 2 pages)
- Budget table, justification, federal forms, and indirect cost rate agreement
- Curriculum Vitae (pubs in last 3 years + 5 other relevant papers)
- Current and pending funding support
- Figures and references
- Appendices

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Other General Guidance

- Be clear about which competition you are targeting and which type of proposal you are submitting
- Direct administrative questions about the FFO to Diane Brown (diane.brown@noaa.gov)
- MAPP PIs may request High Performance Computing support -- see information sheet for more details
- Public access to grant/contract-produced data is required as a result of federal regulations -- see information sheet for details on required data sharing plan (how to make data available and what data need to be available)